

Name \_\_\_\_\_

## From Gene to Protein

1. Given the following DNA sequence, **transcribe** the complementary strand of mRNA.

3' G-T-A-C-C-A-G-T-G-C-A-T 5'  
5' C-A-U-G-G-U-C-A-C-G-U-A 3'

2. **Translate** the following mRNA strand into the amino acids needed to form this particular protein.

5' A-U-G-U-G-C-C-A-A-A-G-A-C-G-U-U-G-A 3'

Met, Cys, Gln, Arg, Arg, STOP

3. Given the following DNA sequence, write the complementary mRNA codons AND tRNA anticodons.

3' ATGGAATTCGGCTAG 5'

mRNA codons            5' UAC, CUU, AAG, CCG, AUC 3'  
tRNA anticodons        AUG, GAA, UUC, GGC, UAG

4. Given the following DNA sequence, determine the amino acids that will create the final protein product. *Hint: Write out mRNA codons first!*

DNA:            3' TACATGGTGCATATT 5'

mRNA codons            5' AUG, UAC, CAC, GUA, UAA 3'  
amino acids              Met, Tyr, His, Val, STOP

5. Given the following DNA sequence, determine the amino acids that will create the final protein product. *Hint: Write out mRNA codons first!*

DNA:            5' TCATCCATTAGCCAT 3'

mRNA codons            5' AUG, GCU, AAU, GGA, UGA 3'  
amino acids              Met, Ala, Asn, Gly, STOP